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ness, a stream of fresh water was constantly flowing. Here, therefore, we had a confirmation of the observations made by Dr. Rink, which in this respect are not new, though he has brought it before us in a very prominent manner.

Dr. RÆ said one of the glaciers he visited had been evidently an ice-giving-off glacier at one time, but the quantity of mud formed from the trituration of the rocks by ice-action, and carried down by the rivers of which Dr. Rink had spoken, had probably filled up the head of the fiord, so that the ice had not had depth of water enough to float it off. With regard to the number of birds seen at the "springs" usually found near the edge of an ice-blink, the birds went there to feed on certain small marine insects resembling very minute shrimps, which on the Arctic coast are almost invariably found where fresh water flows into the salt. These insects being brought to the surface by the flowing upwards of the fresh water through the salt, in consequence of its less specific gravity, are easily caught by the gulls and other waterfowl.

Mr. ROBERT CHAMBERS said, in his opinion, this Paper and the former Paper of Dr. Rink only partially illustrated the great glacial subject. He thought this glacier spoken of resembled the sub-aërial glaciers which are found in Alpine regions, only that it was spread over a wider extent of country. They had only to imagine the sea about 3000 feet higher than it is round the Alps, and they would have the *Glacier du Bois* discharging itself into the sea in the same way that this Greenland glacier was now doing. What he wished more particularly to remark was, that the early general glaciation of the northern regions, by which the surface of those countries had been moulded, and which was chronicled in Scotland by the boulder clay, was, in his opinion, independent of such explanations as this.

COLONEL SHAFFNER explained the diagrams he had prepared, representing the various glaciers, fiords, and icebergs on the coast of Greenland.

The Meeting was then adjourned.

ADDITIONAL NOTICE.

(Printed by order of Council.)

1. *Extracts from a Letter of SAMUEL W. BAKER, Esq., F.R.G.S., to Rear-Admiral the Hon. HENRY MURRAY. Dated Khartûm, 24th Nov., 1862.*

"THE steamer engaged by the adventurous Dutch ladies returned from Gondokoro on the 19th instant, bringing unsatisfactory news of Petherick. He left Abookooka (in the Kytch country) about the 15th July. The steamer left this spot about 31st last month (October), thus *three months and a half* had elapsed since Petherick's departure. From Abookooka he had been obliged to force porters for the land journey. He left the greater portion of his stores at Poncet's depôt at that place, and returned to Khartûm three boats with an immense amount of effects damaged by the rains. Instead of proceeding direct to Gondokoro from Abookooka as I had supposed, by a route said to be firm ground, he went to his ivory establishment in the Jamberra, on the Djour, in a s.s.w. direction. This route is said to be almost impassable during the rains, as the tract of country is intersected by numerous large *hors* or rivers and deep morasses, which are at that season flooded. Since

his departure only three or four of the large number of his porters have returned to Abookooka, and they reported the country to be in a flooded state, and that it was impossible to proceed; most likely these rascals had bolted. Beyond this there was no news.

"In this country beyond all others, success in exploration depends upon a knowledge and choice of seasons: delay is fatal. The north wind is fickle until about the 20th November, and even then its force is hardly felt beyond the Sobat junction. Boats leaving this on the 1st December are said to reach Gondokoro as soon as those which start a fortnight earlier, as they carry the wind with them throughout the route. The rains, which do not set in here until August, commence at Gondokoro, and further south, early in April. Thus a successful passage to Lake Nyanza depends upon a start from Gondokoro, not later than 1st February. Leaving Khartûm on 1st December, I should be at the foot of the cataract beyond Gondokoro by the 20th January: *i. e.* fifty days, including stoppages for observations at the Sobat and Bahr Gazal junctions. This cataract is nine hours' steaming from Gondokoro, by the account kept by the Dutch ladies, and the river is very free from windings; thus the last point to be reached by boats must be upon the fourth degree of N. lat., as nearly as possible, or about 50 miles south of Gondokoro. I shall only remain at Gondokoro a couple of days to discharge my store of corn at the depôt, and I shall at once push on to the cataract and there disembark. Without losing a day unnecessarily, I shall then march for the Nile sources.

"The actual distance from the cataract not exceeding 240 geographical miles, allowing 20 per cent. for deviations of route, will make the journey to the equator about 340 statute miles. Say that I leave the cataract on the 1st February, and that near the equator the rains begin on the 15th March; I have some forty days' dry weather to depend upon, which should bring me there without difficulty—the average being under 9 miles per diem. At the last point attainable before the rains I shall make a fortified camp, and make all snug for men and beasts. During the fine intervals in the wet season I shall make excursions to all points, leaving half my men at the head-quarters. If I get into a good shooting country I have no fear, as the excitement of the chase and the abundant supply of flesh keeps all men in good humour, and ensures the friendship of the natives.

"I have worked incessantly to arrange my expedition with order. The great difficulty in these countries is to establish a regular discipline among the men. Forty of my men are armed with double-barrelled guns and rifles; forty-five form the escort, including one captain and four chourkes, one of the latter to every ten men. I have put them all in uniform, without which it is impossible to discipline them; there is one drummer and one ensign: and I can safely say that a greater set of blackguards never followed the English flag. One great blessing in my intended route is this; when once past the ivory traders' establishments my men dare not desert, as the natives would murder them on the road back. I have expended much trouble in procuring transport-animals, including horses, camels, donkeys, and mules; but I have been disappointed in the expected purchase of ten of the latter, and they are difficult to procure. In all I have twenty-eight animals, and I shall take another couple of donkeys in the cabin if I cannot find room for them elsewhere. With thirty animals I can travel independently of porters, who are the curse of explorations.

The instruments you kindly lent me are in excellent order. I have three watches, which I pack in cotton wool, secured in a small tin-box: thus I trust they will keep their health; but there is a regular epidemic among watches in these parts.

"From inquiries I have made of traders, black, white, and brown, I am of

opinion that the source of the Nile will be found as nearly as possible upon the Equator. I do not believe that the Lake Nyanza has anything to do with the river. The latter must be the effects of innumerable drains from high lands on this side (north) of the lake. I expect to arrive at a network of mountain-torrents, which though dry at certain periods, bring the entire rainfall of the mountains to the main river during the wet season.

"The Atbara brings to the Nile the rainfall of Abyssinia, supplied by the Settite or Tacazzy, the Salaam, and Angarep rivers. The Rahad and Dinder also drain the westerly portion of the Abyssinian range into the Blue Nile, while the latter brings the main supply from the mountains adjoining the Galla frontier. The Sobat without doubt rises in the south-westerly corners of the Galla country bordering the Berri, as the ivory hunters speak of a river about eighteen days' journey east of Gondokoro. This must be one of the Sobat arteries coming from the same elevated land which supplies the White River direct. The Djour runs parallel with the White River west from Gondokoro, evidently coming from the same high land. Thus by analogy one may presume that the main Nile is supplied by the northern watershed of the great chain of highlands running through Abyssinia, the Galla country, and equatorial Africa; and that the Nyanza and other lakes of Central Africa are reservoirs from the southern watershed of the same highlands, at a level so low that there is no escape for the accumulated waters.

"The Sobat runs out so suddenly upon the cessation of the rains that a boat is left in the mud without depth of water for a return to the White Nile. This proves that equatorial mountain-torrents supply that river: in my opinion the White Nile has a similar origin. The steamer with the exploring Dutch ladies (La Baronne Tinné, her sister, and daughter) has been unable to ascend the Sobat for want of fuel. Its course is through vast treeless plains of high grass. With determined pluck they used all their furniture for fuel, in the hopes of reaching some spot of forest, but at length with exhausted fires they floated slowly to the White Nile."
